

## 5 ABSTRACT

A method for assigning a pulse profile, in particular a pulse profile of a scintillation detector having at least two scintillation materials with different decay characteristics, to one of a plurality of pulse types with differing decay times, encompasses the method steps of: acquiring an output pulse profile and converting the pulse profile into an electrical signal whose amplitude-time profile represents the pulse profile of the output pulse; transforming the amplitude-time profile into the frequency space in order to obtain an amplitude-frequency profile representing the output pulse; normalizing the amplitude-frequency profile in order to obtain a normalized amplitude-frequency profile; comparing the normalized amplitude-frequency profile with a predetermined reference profile; and assigning the output pulse profile to one of the pulse types on the basis of the result of the comparison.